

TECHNICAL REPORT

Luminaires – Application of the IK code IEC 62262





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IEC 62696, which is a technical report, has been prepared by 34D: Luminaires, of IEC technical committee 34: Lamps and related equipment.

The text of this technical report is based on the following documents:

Enquiry draft	Report on voting
34D/965/DTR	34D/1001/RVC

Full information on the voting for the approval of this technical report can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

A bilingual version may be issued at a later date.

INTRODUCTION

The IK code detailing resistance to mechanical impact performance, given in IEC 62262, places responsibility on product standard committees to specify:

- definition of enclosure;
- impact test equipment to be used;
- number of samples to be tested;
- conditions for test sample mounting;
- any preconditioning of the test sample;
- whether to be tested energised;
- whether to be tested with moving parts in motion;
- the number of impacts and their points of application.

Other aspects particular to consideration of luminaires may also be appropriate. For example:

- acceptable/non-acceptable damage following impact;
- level of luminaire performance and operation to be maintained following impact.

LUMINAIRES – APPLICATION OF THE IK CODE IEC 62262

1 Scope

This Technical report covers the testing and classification of luminaires according to IEC 62262. The application of an IK rating to a luminaire is considered to be a performance issue and is not directly related to the safety provisions of IEC 60598 standards covering luminaire safety.

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60068-2-75, *Environmental Testing – Part 2-75: Tests Eh: Hammer Tests*

IEC 60598 (all parts) – *Luminaires*

IEC 60598-1, *Luminaires – General requirements and tests*

IEC 62262, *Degrees of protection provided by enclosures for electrical equipment against external mechanical impacts (IK code)*

3 Conditions of testing

3.1 In general, testing is conducted in accordance with IEC 62262, having regard to the general test conditions specified by IEC 60598-1, Subclause 4.13, and the following conditions which are specific for the IK testing and rating of luminaires.

3.2 Impacts should not be applied through openings in the luminaire enclosure with an area less than 64 cm².

NOTE For example, no impact should be applied through the individual openings in optical controls (louvers) if their size is less than 64 cm².

3.3 Luminaires should be tested fully assembled and installed for use.

Luminaires for ceiling or wall mounting should be mounted on a rigid wooden board.

Suspended luminaires should be tested as in normal use, with the minimum suspension length detailed by the manufacturer's instructions.

Luminaires to be installed on a pole, with or without a mast arm, should be installed on a rigid portion of the pole.

Floor mounted luminaires should be tested in a suitable rigid structure to simulate normal use.

3.4 Luminaires should not to be energised during test and no preconditioning of the luminaire sample is required.

3.5 Testing should be conducted on a single luminaire sample unless the results of impact testing of other areas of the luminaire could influence assessment of the result. Three impact blows should be applied to the point(s) of the luminaire considered to be the weakest.

3.6 Impact testing should be conducted using striking elements with head radius and material type as specified by IEC 60068-2-75. Spring hammer apparatus should be used for ratings up to and including IK06. For ratings IK07 and above, the use of pendulum or vertical hammer apparatus is acceptable, as most appropriate for the luminaire design and its intended installation.

3.7 Impact testing should be conducted with the luminaire in its intended mounting orientation whenever this is possible, and when this could affect the outcome of the test (e.g. for assessment of mounting surface fixing security). When impact testing of a ceiling-mounted luminaire is required from below the luminaire, and this is impractical, the luminaire may be rotated 90° (to a wall mounted position) for the purposes of this testing.

3.8 In cases where it may be impossible to carry out the impact test due to the luminaire construction, it is acceptable to use a specially-prepared luminaire to perform the test. For this situation, the modification should not impair the mechanical strength characteristics of the luminaire.

4 Conditions of acceptance

4.1 Safety of the luminaire is to be maintained as per the criteria given in IEC 60598-1, Subclause 4.13. Furthermore, the fixings of the luminaire to the mounting surface should remain secure. Non safety critical damage to the luminaire enclosure and optics is accepted, but no parts of the luminaire should become detached.

Acceptance is checked by visual inspection, and test/measurement where required.

4.2 Protection of the light source should be provided and basic functioning of the luminaire should be maintained.

Acceptance is checked by visual inspection and by operation of the luminaire following the test.

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